

## REMARKS

Applicant is in receipt of the Office Action mailed December 4, 2003. Claims 1, 2, 5, 7-17, 19, 20, and 23-25 have been amended. New claim 26 has been added. Applicant believes that these amendments place the application in condition for allowance. More specifically, Applicant has amended the claims to include the limitation that the desired characteristic is a desired *performance* characteristic, e.g., stiffness and/or response time, as well as the limitation of providing a graphical user interface (GUI) whereby the user indicates the desired performance characteristic.

Applicant notes that neither Arcara and Lane discloses a user interface for specifying a desired performance characteristic for a PID controller, but rather, both Arcara and Lane disclose mathematical equations which Applicant presumes may be used to compute PID parameters, given specified values of response time and other factors. Applicant notes that neither Arcara or Lane discloses a graphical user interface (GUI), nor, for that matter, any type of user interface at all, for specifying the desired performance characteristics of the PID controller. Applicant thus respectfully submits that neither Arcara nor Lane, either singly or in combination, teaches Applicant's invention as claimed. Applicant thus submits that independent claims 1, 12, 19, and 25, and claims respectively dependent thereon, are patentably distinguishable over Arcara and Lane, and are thus allowable.

Applicant also submits that there is no motivation provided in the cited references to combine Gudaz, Arcara, and Lane, and that even if the references were combined, which Applicant argues they are not properly combinable, the resulting combination does not read on the present claims.

As stated in *C.R. Bard, Inc. v. M3 Sys., Inc.*, 48 USPQ 2d 1225, 1232 (Fed. Cir. 1998), the invention that was made, however, does not make itself obvious; that suggestion or teaching must come from the prior art. *See, e.g., Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051-52, 5 USPQ 2d 1434, 1438 (Fed. Cir. 1988) (it is impermissible to reconstruct the claimed invention from selected pieces of prior art

absent some suggestion, teaching, or motivation in the prior art to do so); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) (it is insufficient to select from the prior art the separate components of the inventor's combination, using the blueprint supplied by the inventor); *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985) (the prior art must suggest to one of ordinary skill in the art the desirability of the claimed combination).

Applicant notes that Gudaz does not teach or suggest providing a GUI for user specification of a desired *performance* characteristic, as the Examiner has admitted, and furthermore, as described above, neither Arcara nor Lane teaches or suggests a GUI at all. In fact, Gudaz's GUI teaches away from Applicant's invention as claimed, since Gudaz specifically describes the GUI as allowing user specification of robustness parameters, where resulting performance characteristics may be determined or viewed by the user via display of the resulting behavior. In other words, Gudaz teaches user specification of robustness characteristics, and programmatic determination of PID controller parameters based on the robustness characteristics, with resultant performance characteristics viewable by the user; while in Applicant's system, the user indicates desired performance characteristics, and corresponding PID controller parameters are programmatically determined. Thus, Gudaz teaches away from Applicant's system. Thus, Applicant respectfully submits that Gudaz, Arcara, and Lane are not properly combinable, and that even in combination, the cited references do not teach or suggest Applicant's invention as claimed. Thus, Applicant submits that neither Gudaz, Arcara, nor Lane, either singly or in combination, teaches or suggests Applicant's invention as claimed, and so claims 1, 2, 5, 7, 8, 11-14, 17, 19, 20, and 23-25 are patentably distinct over Gudaz, Arcara, and Lane, and are thus allowable for at least the reasons provided above.

Removal of the 102(e) rejection of claims 1, 2, 5, 7, 8, 11-14, 17, 19, 20, and 23-25 is respectfully requested. In light of the allowable matter of the independent claims, removal of the 103(a) rejection of claims 6, 9, 10, 15, and 16 is also respectfully requested.

Regarding new claim 26, Applicant notes that in the systems disclosed by Arcara and Lane, the user is required to numerically or quantitatively provide a value, such as response time, from which PID parameters are computed. As noted above, no user interface is described or suggested. In contrast, Applicant's new claim 26 is directed to receiving user input to a graphical user interface (GUI) indicating a desired *qualitative performance* characteristic of a PID controller autotuning algorithm, i.e., *not* a numeric or quantitative value. For example, the GUI may include one or more slider controls whereby the user may qualitatively specify such performance characteristics as stiffness and response time. In other words, the user may provide input controlling or manipulating the slider controls, e.g., with a mouse or other pointing device, to specify that the PID controller have more or less of a given performance characteristic, e.g., that the PID controller behavior be "more stiff", "more smooth", "faster", or "slower". This feature is supported in the specification, and is particularly illustrated by Figure 4A, where GUI controls (sliders) are provided to the user for indicating desired stiffness/smoothness and/or fast/slow response time. Note that quantitative values of these characteristics are not displayed, nor input by the user, i.e., the user is not exposed to these parameters quantitatively, only qualitatively.

Applicant notes that none of the cited art (Gudaz, Arcara, and Lane), either singly or in combination, teaches or suggests the features and limitations of claim 26. Thus, Applicant respectfully submits that new claim 26 is patentably distinct over the cited art, and is thus allowable.

## CONCLUSION

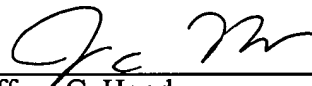
In light of the foregoing amendments and remarks, Applicant submits the application is now in condition for allowance, and an early notice to that effect is requested.

If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel PC Deposit Account No. 50-1505/5150-51300/JCH.

Also enclosed herewith are the following items:

- ☒ Return Receipt Postcard
- ☐ Petition for Extension of Time
- ☐ Request for Approval of Drawing Changes
- ☒ Notice of Change of Address
- ☐ Check in the amount of \$            for fees (        ).
- ☐ Other:

Respectfully submitted,

  
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